Chapter 12
Friendships of Delinquent and Non-delinquent Adolescents in Classrooms

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12.1 Introduction

Early adolescence is the time when the "maximum likelihood of delinquency" occurs (Hirschi 1977, p. 339) and, coincidentally, the time when friends become increasingly important (Durkin 1995). Delinquency related to friendships of adolescents is an obvious and relevant topic of investigation since a reliable explanation of the link may lead to effective ways for preventing delinquency and its negative effects on society. Indeed, numerous studies have been conducted with mainly two foci.

Classically two different though theoretically related issues form the focus of research. One is related to the question of why adolescent friends are similar in their delinquent behaviour. This has been found repeatedly (e.g. Dishion et al. 1995; Fletcher et al. 1995; Haynie 2001; Reed and Rose 1998). Whether this correlation is due to selection processes, i.e. delinquent adolescents become friends, or due to influence processes, i.e. friends influence an adolescent's level of delinquency, is at the heart of that line of investigation. The second prevalent issue tackles the question of how delinquent and non-delinquent adolescents differ in their friendship relations. We attempted to explain the first issue elsewhere (Knecht et al. 2010) with the data set used for the study at hand. In this study I focus on the second issue, i.e. relational differences of delinquent and non-delinquent adolescents.

In the context of friendship relations of delinquent and non-delinquent adolescents typically the distinction is made between the social ability model and the

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social disability model (Hansell and Wiatrowski 1981). The social ability model assumes delinquent adolescents to have social skills like other youth and, thus, to have social relationships comparable to those of non-delinquent adolescents. In contrast, the social disability model assumes that there are severe differences in the social relationships of non-delinquent and delinquent adolescents with the latter having relationships of only poor quality.

The objective of the present study is to compare the predictions of the social ability versus the social disability model. In other words: are friendship relations of delinquent adolescents different from those of non-delinquent adolescents?

As stated before, there are studies attempting to give answers to this question. Some of these studies suffer from methodological drawbacks. Several studies use selective data sets that consist only of information regarding homogenous groups of adolescents. Often the data that are analysed are limited to male respondents (Marcus 1996). As differences between boys and girls may be profound, such results would merely apply to half of the adolescent population. Other studies focus exclusively on data on ethnic minorities (e.g. Pabon et al. 1992), which again produces results that cannot be generalised. Another disadvantage related to data is the reliance on personal perceptions of relations. Complete network data yield additional information on the structure of friendship embeddedness as isolates are also included (Demuth 2004) and mutual relationships can be detected. As of recently, more and more attempts are made to apply social network analytical methodologies (e.g. Baerveldt et al. 2004; 2010; Weerman and Bijleveld 2007).

To allow for new insights regarding the frequently asked research question at hand, I use self-reported data of Dutch pupils in early adolescence. These data include information on friendships and delinquent behaviour of both boys and girls from the ethnic majority and minorities. Complete networks of adolescents have been assessed in classroom settings in order to determine friendship embeddedness. Social activity, popularity, reciprocity, and a measure for social status are regarded as indicators for friendship quality.

Section 12.2 contains an outline of the theoretical explanations of the social ability and disability models and related hypotheses. In Sect. 12.3, I provide a description of the data before presenting the results in Sect. 12.4. The chapter concludes with a discussion.

12.2 Theory

As the theoretical underpinning of the social ability model and the social disability model, we draw on learning theories such as differential association theory, and on social control theory such as social bond theory. Since learning theories and social control theories have been studied extensively[1] a complete review of the research

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[1] According to Cohn and Farrington (1999), Hirschi is one of the most cited authors in academic journals on criminology, particularly in the US.

related to these theories is obviously beyond the scope of this study. Therefore, I sketch the main assumptions and present hypotheses in this section.

12.2.1 Social Ability Model

According to social learning theories such as the differential association theory (Sutherland and Cressey 1978), adolescents are delinquent because they learn this way of behaviour like other kinds of behaviour from their peers. Therefore, a prerequisite for delinquency is some kind of intimate social relationship—because delinquency is passed on by socialisation processes. In order to develop and maintain intimate social relationships, someone needs to be socially adept. Learning theory considers the same social skills in delinquent and non-delinquent youths and, hence, no difference in friendship embeddedness. Relationships are characterised by stability, reciprocity, and transitivity and they are organised in cliques (Hansell and Wiatrowski 1981). Meaningful relationships are potentially possible for all adolescents alike, and can also be maintained by and with delinquent persons.

12.2.2 Social Disability Model

Social control theory deals with the theoretical idea of the social disability model. An example of social control theory is Hirschi's social bond theory. From the perspective of this theoretical approach everybody is potentially deviant by nature. So instead of explaining why people become delinquent or criminal, the question is rather why they are not. Key in preventing delinquent behaviour is a bond to society. Social bonds require social skills and are formed in the family and in other settings including educational institutions (Wiatrowski et al. 1981). If the bond is weak or absent the natural disposition manifests. Attachment (as one component of the theory) to others restrains people from acting out on deviant streaks. Hirschi (1977) states that "[d]elinquents do tend to associate with delinquents, just as kids interested in chess tend to associate with each other, but the ties among delinquents are not equal in quality to those among other peer groups" (p. 337). Their relations tend to be instable, unreciprocated and are found in fussy conglomeration rather than in clearly defined cliques (Hansell and Wiatrowski 1981). A lack of social skills leads to low friendship quality and less social embeddedness of delinquent youths.

In short, friendship quality of delinquent adolescents is poor compared to the friendship quality of non-delinquent adolescents due to the lack of social abilities. Social abilities manifest themselves in different ways. I use social activity, popularity, reciprocity, and relational status as indicators (see Sect. 12.3). Social activity requires an interest in others and also reflects previous experiences with peers. Popularity indicates that others appreciate that person's company; this is rather unlikely with people who lack social abilities. Reciprocity shows that a social relationship is 'successful'. It tells us something about the strength of a tie

(Granovetter 1973). It is generally understood that real friendships are supposed to be reciprocal. The relational status relates social activity and popularity. People who are socially skilled are believed to have more options to find friends, and their wish for friendships is easily saturated. Our hypotheses regarding delinquency and friendship embeddedness are formulated from the perspective of the social disability model, where differences between delinquent and non-delinquent adolescents are postulated as follow:

H1   Delinquent pupils are socially less active than non-delinquent pupils.
H2   Delinquent pupils are less popular than non-delinquent pupils.
H3   The social relationships of delinquent pupils tend to be reciprocal to a lesser degree than the relationships of non-delinquent pupils.
H4   Delinquent pupils have lower relational status than non-delinquent pupils.

12.3 Data

We test our hypotheses with data that were collected in 126 first-grade classes in 14 secondary schools in the Netherlands.[2] The schools are in rural as well as urban areas and include both private and public institutions. The survey was conducted during the academic year 2003/2004. The original data set contains of 3,017 pupils, both male and female, both majority and minority. On average, pupils are 12 to 13 years old at the beginning of the data collection. The pupils themselves reported on their friendships within class and their behaviour at four points in time in one school year, so there is the advantage of having self-reported data available (Jussim and Osgood 1989).

For more information on the content of the data set and on the way it was obtained see Knecht (2006). For the analysis presented in this study I rely on a subsample of 857 pupils in 35 classes. The mean number of pupils per class is 24.5, indicating comparatively low levels of non-response in the selected sample. This subsample resembles the full sample in important characteristics. In order to explore the topic, as a first step we further restricted the analysis to information obtained in the first wave of the survey.

12.3.1 Measures

The instrument used for data collection was a questionnaire for the pupils. It included questions about their delinquent behaviour and their friendships. Important background information were gathered as well. Besides these questions, many others that are less relevant for the study at hand were included as well.

12.3.2 Delinquency

Delinquency was measured by asking for four offences, namely theft, graffiti spraying, interpersonal aggression, and vandalism. Pupils were asked about whether they had partaken in these kinds of actions in the last three months prior to data collection. Responses were coded as frequencies with five answer categories, that is to say 'never', 'once', 'two to four times', 'five to ten times', and 'more than 10 times'. Descriptive statistics for the four delinquency items are given in Table 12.1. It is obvious that the great majority is not involved in delinquent actions, a result that replicates the findings of most other studies on ordinary adolescents. Theft is the delinquent behaviour that occurs the least; interpersonal aggression is the most widespread offence and also the one that is committed the most frequently, with 4.3 % of adolescents in the sample having been involved in fights more than ten times within three months. For these items, the percentages of missing values consistently remain below 10 %.

Though the different categories of delinquency items are not equidistant with regard to frequency, they might very well be so with regard to perceived intensity. The averages of the four items were transformed into a delinquency scale with values ranging from 1 (zero delinquency) to 5 (high level of delinquency). The scale's internal consistency is demonstrated by a high alpha coefficient of 0.66, and a factor analysis proved its one-dimensionality. For the purpose of our study we divided the pupils into two groups according to their level of delinquency. One group comprised those adolescents who reported no or almost no delinquent acts (60.8 %). They had either never committed any offense or had not committed any of the four offences more than once. The other group consisted of those adolescents who had reported a higher rate of delinquent behaviour (39.2 %).

Table 12.1 Frequency of delinquent behaviour in percent (N = 785–789)

	Never	Once	2–4 times	5–10 times	>10 times
Theft	92.5	4.5	1.9	0.5	0.6
Graffiti spraying	91.2	5.1	2.0	1.2	0.5
Interpersonal aggression	67.7	12.5	12.0	3.4	4.3
Vandalism	85.9	8.3	4.4	0.4	1.0

12.3.3 Social Network Indicators

The measure for friendships is based on the question "Who are your best friends in class?" Nominations of up to 12 classmates were allowed. Obviously, this restriction of answer options did not present a source of difficulty as the average of nominations suggests. On average, pupils nominated 3.37 fellow pupils as friends.

The relational data is assessed in terms of directed graphs (Wasserman and Faust 1994). Information is available on ties connecting two persons and also on the

direction of a tie. The sender and the receiver of a tie can be identified. The following features are prerequisites for the social network indicators: social activity, popularity, reciprocity, and relational status. Social activity is operationalised as the so called outdegree, i.e. the outgoing friendship nominations. As noted above, the average outdegree is 3.37. Approximately three other pupils in the same classroom are considered friends by these adolescents. The popularity of a person is measured as indegree, i.e. the incoming friendship nominations. That means a person was nominated as a friend by others. The indegree is 3.37, which corresponds to the average numbers in outdegree. On average, each adolescent is considered a friend by three others. As the relational data are based on unconfirmed friendship nominations, the friendship nominations are not necessarily returned by the receivers towards the senders. If they are returned we speak of a reciprocated tie. Reciprocity can be seen as an indicator for the strength of a tie. Typically two friendships of each adolescent are reciprocated. The relational status can be operationalised in different ways. I apply a measure relating outdegree and indegree. Relational status is higher if the indegree exceeds the outdegree. The measure has a standard deviation of 2.69. All four measures meet the requirements of parametric tests.

12.3.4 Background Information

As background variables we obtained the information on sex, with 48.3 % female and 51.7 % male adolescents. Regarding ethnicity, we have 70 % Dutch and 30 % non-Dutch pupils in the sample. Being Dutch is determined by having one parent or both parents who were born in the Netherlands and having Dutch as the dominant language at home. In addition we know that pupils are on average 12.2 years old, with the youngest being 11 years old and one pupil reporting to be 15 years of age. The majority of the pupils have their most important friends in class (53 %) and somewhat fewer pupils have most of their friends in class (36 %), making the classroom and, thus, the educational institution an important setting for friendship formation and maintenance.

For gender and ethnicity we present the distribution of delinquent behaviour in Table 12.2. In general, boys are to some degree more delinquent than girls. More boys than girls are involved in delinquency and also to a higher degree. The result does not surprise and can be found in most other studies on delinquency in

Table 12.2 Delinquency level according to gender and ethnicity in % (N = 763/697)

Delinquency level	Low				High
	1	2	3	4	5
Female	69.4	27.3	2.9	0.3	0.0
Male	52.6	38.7	5.4	2.8	0.5
Dutch	63.6	31.6	3.0	1.4	0.4
Non-Dutch	54.1	38.1	6.2	1.5	0.0

Table 12.3 Network embeddedness by gender and ethnicity (mean values; N = 218–542)

	Activity	Popularity	Reciprocity	Status
Female	3.36	3.29	2.00	−0.08
Male	3.37	3.42	1.96	0.05
Dutch	3.43	3.44	2.10*	0.01
Non-Dutch	3.43	3.33	1.84*	−0.11

*Significant difference at the 0.05-level

adolescence when data on male and female youth are available (e.g. Houtzager and Baerveldt 1999). Considering the differences in delinquent behaviour with respect to ethnic majority and minority, we see that adolescents who belong to the minority committed somewhat more offences. Both groups contain only a minimal number of notorious delinquents.

The relation of network indicators by gender and ethnicity are shown in Table 12.3. Social activity seems to be independent of gender and ethnicity. Boys and girls have similar levels of social engagement. The same holds for Dutch and non-Dutch adolescents. Though dissimilarities are rather small, boys are more popular than girls and the Dutch pupils are more popular than the non-Dutch pupils in the Netherlands. Similarly, for relational status there are also minor differences. The status of boys compared to girls and of Dutch compared to non-Dutch are slightly higher. None of these comparisons are statistically significant. By way of contrast, reciprocity forms an exception, at least when considering ethnic groups. The Dutch pupils in our sample have, on average, significantly more reciprocated ties (2.10) than non-Dutch pupils (1.84).

12.4 Results

In this Sect. 12.1 present correlations of delinquency and network embeddedness as described in the hypotheses H1–H4. They are tested using t-tests. The corresponding outcomes are shown in Table 12.4.

For both, activity and reciprocity, there are no differences between delinquent and non-delinquent adolescents in their mean values regarding these network indicators. Regarding status, delinquent adolescents have higher values than non-delinquent ones. Tests of the statistical significance of results for these three network indicators yield p-values higher than 0.05. The null hypotheses that assume similarity are thereby refuted. Only the difference in popularity is significant. In contrast to our prediction, delinquent individuals are not less or equally popular, but more popular than non-delinquent ones. On average non-delinquent pupils are chosen by 3.32 others as friends, delinquent pupils by 3.57 others.

When taking a closer look and splitting the delinquency scale into its four items, we get a fuller picture of the correlations at play. Delinquency is ordinal and

Table 12.4 Comparing delinquent and non-delinquent adolescents and their network characteristics (N = 296–464, four separate t-tests)

Network indicator	Level of delinquency	Mean (sd)	p (t-test)
Activity	−	3.48 (2.44)	0.950
	+	3.49 (2.63)	
Popularity*	−	3.32 (1.67)	0.049
	+	3.57 (1.75)	
Reciprocity	−	2.06 (1.30)	0.556
	+	2.01 (1.35)	
Status	−	−0.16 (2.52)	0.246
	+	0.08 (3.06)	

*Significant difference at the 0.05-level

Table 12.5 Correlation of offences and network embeddedness (rho and its p-value; N = 779–789)

	Theft	Graffiti spraying	Interpersonal aggression	Vandalism
Activity	0.02 (0.553)	−0.03 (0.377)	−0.02 (0.608)	−0.01 (0.801)
Popularity	0.02 (0.546)	0.01 (0.818)	0.08*(0.018)	0.03 (0.482)
Reciprocity	0.00 (0.975)	−0.03 (0.465)	−0.05 (0.201)	−0.03 (0.469)
Status	0.00 (0.983)	0.03 (0.517)	0.06 (0.094)	0.01 (0.847)

*Significant at the 0.05-level

not normally distributed; therefore Spearman's rho is the appropriate statistic here in order to assess the strength and the direction of the bivariate correlations. The results are presented in Table 12.5. All correlations are rather small. The correlation of popularity and interpersonal aggression has the highest coefficient (0.08) and the only one that is significant at the 0.05-level. The direction of the association is positive. Higher levels of aggressive behaviour are related to higher levels of popularity. Note that the cross-sectional data only allows speculation on causal mechanisms.

Next, let us zoom in further on the association of offences and network indicators and consider differences between boys and girls. Here again, most correlations have values around zero and p-values far beyond 0.5. Two coefficients stand out because they have a fairly higher, significant value. These are the associations of popularity and status with interpersonal aggression. This is only valid for boys and not for girls. For male adolescents, both popularity and status are positively related to aggressive behaviour (Table 12.6).[3]

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[3] For the sake of completeness, no correlations are significant when considering differences by ethnicity. Results are not presented.

Table 12.6 Correlation of offences and network embeddedness by gender (rho and its p-value; N = 378–405)

		Theft	Graffiti spraying	Interpersonal aggression	Vandalism
Activity	Female	−0.02 (0.727)	−0.01 (0.829)	0.01 (0.867)	0.03 (0.543)
	Male	0.05 (0.328)	−0.05 (0.370)	−0.03 (0.580)	−0.03 (0.496)
Popularity	Female	−0.04 (0.457)	−0.03 (0.533)	0.01 (0.841)	−0.03 (0.616)
	Male	0.06 (0.233)	0.04 (0.468)	0.14*(0.005)	0.06 (0.212)
Reciprocity	Female	−0.03 (0.517)	−0.03 (0.543)	−0.08 (0.133)	−0.03 (0.602)
	Male	0.03 (0.603)	−0.02 (0.690)	−0.02 (0.711)	−0.02 (0.668)
Status	Female	0.00 (0.971)	−0.02 (0.722)	−0.00 (0.943)	−0.06 (0.264)
	Male	0.00 (0.997)	0.05 (0.290)	0.11*(0.026)	0.05 (0.287)

*Significant on the 0.05-level

12.5   Conclusion

In this chapter I examined possible differences in network embeddedness between adolescents who exhibit delinquent behaviour and who hardly exhibit delinquent behaviour, or none at all. The purpose of the present investigation was to compare predictions from the social ability model and the social disability model.[4] The first theoretical model draws on learning theories. Here, the focus is on differential association theory (Sutherland and Cressey 1978). While the other model—the social disability model—draws on social control theories, here represented by social bond theory (Hirschi 1977). Social bond theory assumes delinquent adolescents to lack social skills, which leads to adverse friendship embeddedness, in contrast to non-delinquent adolescents. Generally, differential association theory does not assume differences and regards all youths as socially able.

I was looking at the friendships of delinquent and non-delinquent pupils in early adolescence in general, regardless of their friend's delinquency. Friendship embeddedness was assessed using social network indicators such as social activity (outdegree), popularity (indegree), reciprocity and relational status. The data set of young adolescents in the Netherlands is heterogeneous with regard to gender and ethnicity. It contains information on complete friendship networks within classrooms in secondary schools that are appropriate for computing the proposed network indicators.

The results of this study suggest that delinquency is not related to social activity and the strength of ties. Delinquent and non-delinquent adolescents are equally socially engaged and have reciprocal friendship ties. These findings contradict the prediction of the social disability model and favour the ability model. Results are possibly explained by learning theories rather than by Hirschi's social bond theory. They are in line with other studies that overall support the ability model and use a network analytical approach (Baerveldt et al. 2004; Smångs 2010). The evidence

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[4] Note that social ability only refers to relational properties and does not take into account (unfavourable) characteristics of the contact person.

for the ability model is not perfect, as another finding indicates that delinquent boys are slightly more popular and have a slightly higher relational status than less delinquent boys. This outcome resembles the findings of Weerman and Bijleveld (2007). Their results show delinquent adolescents to be more popular than their non-delinquent peers, though the difference in popularity between the two groups is also small. This unexpected result does not agree with either the social ability model or the social disability model. Therefore, an explanation has to be found elsewhere. Theory and empirical research in developmental psychology acknowledge that delinquent behaviour is not unattractive and is rather seen as a sign of maturity by peers with the result that aggressive behaviour may lead to an increase in popularity, at least for boys (De Bruyn and Cillessen 2006; LaFontana and Cillessen 2002; Rodkin et al. 2000). Delinquent adolescents are not avoided or rejected. We can draw this conclusion after considering differences for boys and girls and splitting the scale for delinquency into its single items. The analyses showed different results when a scale was used (no significant effects) and when single items were used (few significant effects).

Future studies should take into account differences due to gender as implied by the study at hand. One should also bear in mind that different measures of delinquency may lead to different results (see Wiatrowski et al. 1981; for the division of petty and serious crime see Weerman and Bijleveld 2007). Especially interpersonal aggression is related to network embeddedness and should be given special consideration. Further analyses would also profit from a longitudinal approach. Longitudinal analyses reveal deeper insights, e.g. into the causality of popularity and aggressive behaviour. Using longitudinal data and suitable statistical programs would also permit an investigation of the interrelations of network indicators and the dependence of social network data.

The current study has the following limitations that need to be paid attention to when evaluating the results and putting them into context. Firstly, only friendships in class are analysed. Though the classroom is an important context, delinquent behaviour may most often occur outside the classroom, where other friends are important, e.g. (older) siblings, other pupils from different classes or peers from the neighbourhood. Systematic differences have been found by Claes and Simard (1992), namely that delinquents tend to socialise more outside of educational institution than non-delinquents do. Secondly, other relational and structural characteristics may lead to different results. We only focused on social activity, popularity, reciprocity and a measure for relational status. There are many more sensible indicators for friendship quality, e.g. triadic closure as an indicator for the formation of cliques as used by Smångs (2010). The quality of friendships went unconsidered, though the structural embeddedness shows no huge differences as demonstrated by the study at hand; the strength of friendship relations may differ systematically between delinquent and non-delinquent adolescents. Thirdly, we focused only on one aspect of the theoretical models, namely friendship quality. Another aspect is the chronological order of friendship and delinquency, i.e. whether friendship precedes delinquency (influence) or if the inverse is true (selection) as was briefly mentioned in Sect. 12.1. Influence processes are, again,

related to learning theories (e.g. Sutherland and Cressey 1978) and selection processes are related to control theories (e.g. Gottfredson and Hirschi 1990). A study on both aspects—causality of friendship emergence and delinquency and of friendship quality and delinquency—might be helpful to decide the usefulness of the social ability and the social disability model.

Despite these limitations, our study produced important results, such as the special case of interpersonal aggression among other acts of delinquency. In short, this article demonstrates that the existing theoretical models that are often used cannot explain all findings. A more complex theoretical framework seems to be necessary. Instead of theoretically differentiating only between the social ability model and the social disability model, a third variant should be introduced and developed: some kind of "social super-ability model" that incorporates the fact that delinquent adolescents may even be more relationally integrated than others.

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